

UNITED STATES PATENT OFFICE.

WILLIAM MUSGROVE, OF STUDHOLM PARISH, AND JOSEPH SAMUEL SHARP,
OF SUSSEX PARISH, CANADA.

IMPROVEMENT IN CAR-COUPPLINGS.

Specification forming part of Letters Patent No. 130,934, dated August 27, 1872.

Specification describing certain Improvements in Car-Couplers, invented by WILLIAM MUSGROVE, of the parish of Studholm, in the county of Kings, in the province of New Brunswick and Dominion of Canada, and JOSEPH SAMUEL SHARP, of the parish of Sussex, in the county of Kings, in the province of New Brunswick and Dominion of Canada.

The first part of our invention relates to the combination, with a draw-bar, of a spring operating, in a longitudinal slot therein, upon a lug formed on a transverse shaft passing through the draw-head, in such a manner that the lug, aided by the spring, holds the coupling-bar in the draw-head when coupling is effected, and retains it in a horizontal position for coupling when the cars are detached. A lug or cam on a transverse shaft passing through jaws on the draw-bar presses on the spring and effectually secures against uncoupling. The second part of our invention relates to the manner of operating the aforesaid shafts for effecting uncoupling from the sides of freight-cars, or platforms of passenger-cars, by means of arms keyed to the shafts and connecting-chains winding on a shaft placed transversely under the floor of a freight-car and operated from either side, or on a vertical shaft operated from the end platform of passenger-cars, in a frame secured thereto.

Figure 1 is an end view of a car-coupling embodying our invention, applied to a freight-car. Fig. 2 is an end view of the same applied to a passenger-car. Fig. 3 is a top view of the draw-bar and coupling device. Fig. 4 is a longitudinal vertical section of the same.

A is the draw-head, having an enlarged mouth, B. C is the coupling-bar, provided with a step at each end. D is a shaft passing transversely through the draw-head provided with a lug, E, which engages with the step of the bar C. F is a flat spring secured at one end to the draw-bar and operating in a longitudinal slot therein. This spring is provided with a projection on its under side which presses on the lug E and keeps it in engagement with the step of the coupling-bar, and effecting the coupling of the cars when the bar is brought into engagement with the coupler of the annexing car. When the cars are

disconnected the coupling-bar is maintained in a horizontal position, ready for coupling by the action of the spring F on the lug E, as shown in Fig. 4. G is a transverse shaft bearing in jaws formed on the top of the draw-bar. This shaft is provided with a lug or cam, H, which, when brought to engagement with the top of the spring F, prevents it rising, thus securing the bar C from untoward uncoupling.

We will now proceed to describe the means employed for uncoupling in the case of freight-cars, as shown in Fig. 1. N is an arm keyed on the end of the shaft G for operating the lug and shaft. To one end of this arm chains O are attached which lead, over pulleys I, to each side of the car, so that when either chain is pulled it raises the arm N and rotates the shaft G a quarter revolution, thereby releasing the lug or cam H from its engagement with the spring F, to allow uncoupling to be effected. In this state of tension the chain O is to be hooked to the side of the car so that the spring F will be free to operate, to allow recoupling without any manipulation. L is a chain attached to the arm M, keyed on the shaft D and connected with the shaft J traversing the whole width of the car between the floor and draw-bar, to be operated by crank-handles K from either side of the car when uncoupling. By the rotation of the shaft J by the handles K the chain L is wound round the shaft, thereby raising the arm M, which partially rotates the shaft D and disengages the lug E thereon from the step of the bar C, thus uncoupling the cars.

In the case of passenger-cars the shaft J is dispensed with and use made of a pulley, R, to carry the chain L to a vertical shaft, P, operating on a frame, Q, secured to the platform S of the car. The shaft P is provided with a ratchet-wheel, T, to engage with a pawl pivoted on the platform, and is operated by a hand-wheel, U, to wind the chain thereon for raising the arm M; as and for the purpose before described. The chain O is led, by a pulley, V, to the frame Q, so as to be within easy reach of the operator, for manipulating the same when uncoupling, as before described.

By means of our invention coupling is effected by the contact of the cars, and uncoupling

is effected from the end or from the side of the car, thus placing the operator out of danger when the cars come together.

We claim as our invention—

1. The shaft D provided with a lug, E, spring F, and shaft G provided with a lug, H, operating as described, in combination with the draw-bar A, constructed with a mouth, B, as and for the purpose set forth.
2. The combination of the arm M, chain L, and coupling-shaft D, applied substantially as

described, whether operated by a vertical or by a horizontal shaft, as set forth.

3. The arm N and chains O, applied as set forth, for operating the shaft G from the end or side of the car, for the purpose specified.

WILLIAM MUSGROVE.
JOSEPH SAMUEL SHARP.

Witnesses:

R. CHIPMAN SKINNER,
IRA B. KEITH.